DOCUMENT RESUME

ED 462 079 IR 058 418

AUTHOR Jiao, Qun G.; Onwuegbuzie, Anthony J.

TITLE The Relationship between Library Anxiety and Social Interdependence.

PUB DATE 2001-11-00

NOTE 25p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (30th, Little Rock, AR, November 14-16, 2001).

PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.

DESCRIPTORS Academic Libraries; *Anxiety; Correlation; Graduate Students; Higher Education; *Interpersonal Relationship; *Measures (Individuals); *Student Attitudes; Student Surveys

IDENTIFIERS *Interdependence; *Library Anxiety; Library Attitudes

ABSTRACT

This study examined the relationship between library anxiety and social interdependence. Participants were 115 graduate students from various disciplines who were administered the Library Anxiety Scale (LAS) and the Social Interdependence Scale (SIS). The LAS assesses levels of library anxiety. This instrument has the following five subscales: barriers with staff, affective barriers, comfort with the library, knowledge of the library, and mechanical barriers. The SIS measures individuals' cooperative, competitive, and individualistic perceptions. A canonical correlation analysis revealed that cooperative attitudes were related significantly to barriers with staff, comfort with the library, and knowledge of the library. Individualistic attitudes, affective barriers, and mechanical barriers served as suppressor variables. (Contains 66 references.) (MES)

Reproductions supplied by EDRS are the best that can be made from the original document.

Running head: LIBRARY ANXIETY AND SOCIAL INTERDEPENDENCE

ED 462 079

The Relationship Between Library Anxiety and Social Interdependence

Qun G. Jiao

Baruch College

The City University of New York

Anthony J. Onwuegbuzie

Department of Human Development and Psychoeducational Studies

Howard University

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Q.G. Jiao

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

4 This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Correspondence should be addressed to: Qun G. Jiao, Newman Library, Baruch College, The City University of New York, 151 E 25 Street, Box H-0520, Room 233, New York, NY 10010. Phone (212) 802-2436. Fax (212) 802-2393. E-mail: gerry_jiao@baruch.cuny.edu.

Paper presented at the annual meeting of the Mid-South Educational Research Association, Little Rock, AR, November 15, 2001.

IR058418

BEST COPY AVAILABLE

Abstract

The present study examined the relationship between library anxiety and social interdependence. Participants were 115 graduate students from various disciplines who were administered the Library Anxiety Scale (LAS) and the Social Interdependence Scale (SIS). The LAS assesses levels of library anxiety. This instrument has the following five subscales: *barriers with staff*, *affective barriers*, *comfort with the library*, *knowledge of the library*, and *mechanical barriers*. The SIS measures individuals' cooperative, competitive, and individualistic perceptions. The higher the score on each of the three SIS subscales, the more cooperative, the more competitive, or the more individualistic the respondents consider themselves to be. Scores on these scales are relatively independent so that a student could conceivably receive a high score on all three scales. A canonical correlation analysis (R_c = 0.41) revealed that cooperative attitudes were related significantly to barriers with staff, comfort with the library, and knowledge of the library. Individualistic attitudes, affective barriers, and mechanical barriers served as suppressor variables. Implications are discussed.

The Relationship Between Library Anxiety and Social Interdependence

For the vast majority of students, the ability to utilize the library and its resources is crucial for successful completion of a college education (Onwuegbuzie, Bostick, & Jiao, in press). In particular, these students need to be able to use the library to identify, to access, and to retrieve information (Grimes & Charters, 2000) in order to attain and to maintain high levels of academic performance. Unfortunately, many college students do not possess the knowledge, skills, experience, persistence, learning style, self-concept, or self-confidence to utilize the library effectively (Jiao & Onwuegbuzie, 1997, 1998, 1999a; Mech & Brooks, 1995; Onwuegbuzie & Jiao, 1999), and thus are ill-prepared to undertake term projects, research assignments, theses, dissertations, and the like (Grimes & Charters, 2000; Onwuegbuzie, 1997a). This lack of preparedness leaves many students with a negative attitude toward college libraries (Bostick, 1992), leading to procrastination (Onwuegbuzie & Jiao, 2000) and avoidance behaviors (Onwuegbuzie & Jiao, 1997). More specifically, the academic library represents a source of apprehension for a significant proportion of students (Egan, 1992; Westbrook & Dedecker, 1993). Mellon (1986) has conceptualized this fear and uneasiness experienced by students as library anxiety.

According to Jiao, Onwuegbuzie, and Lichtenstein, (1996), library anxiety is "an uncomfortable feeling or emotional disposition, experienced in a library setting, which has cognitive, affective, physiological, and behavioral ramifications" (p. 152). Library anxiety manifests itself in negative emotions, including tension, fear, feelings of uncertainty and helplessness, negative self-defeating thoughts, and mental

disorganization, all of which have the propensity to debilitate information literacy (Jiao & Onwuegbuzie, 1997, 1999b). Students with high levels of library anxiety typically exhibit many symptoms. For instance, in attempting to find periodicals or books, an anxious library user may overlook maps and signs or misinterpret directions (Keefer, 1993), refrain from asking for help (Kuhlthau, 1991), or give up their search before attaining their goals (Jiao & Onwuegbuzie, 1997).

Several forms of academic-related anxiety have been identified, including research anxiety (Onwuegbuzie, 1997a, 1997b, 1997c, 1997d), statistics anxiety (Onwuegbuzie, in press; Onwuegbuzie, DaRos, & Ryan, 1997; Onwuegbuzie & Wilson, 2000; Roberts & Bilderback, 1980; Schacht & Stewart, 1990; Zeidner, 1991), writing anxiety (Daly & Miller, 1975a, 1975b, 1975c; Daly & Shamo, 1976, 1978; Daly & Wilson, 1983), foreign language anxiety (Bailey, Onwuegbuzie, & Daley, 1998, 2000a, 2000b, 2000c; Horwitz, Cope, & Cope, 1986; MacIntyre & Gardner, 1991a, 1991b, 1991c; Onwuegbuzie, Bailey, & Daley, 1999a, 1999b, 1999c, 2000, in press-a, in press-b; Young, 1991), and general test anxiety (Everson, Millsap, & Rodriguez, 1991; Hill, 1984). However, library anxiety appears to be among the most prevalent forms of academic-related anxiety, presumably because virtually every student is compelled to use the library at some point in their programs of study. Indeed, according to Mellon (1986), 75% to 85% of undergraduate students experience some form of library anxiety.

Because many library-anxious students tend to perceive that other students are proficient at utilizing the library, whereas they alone are incompetent, and that their ineptness is a source of humiliation (Melon, 1986, 1988), it is likely that level of

competitiveness is related to library anxiety. Further, because some college students use the library on an individual basis, whereas others tend to utilize the library to fulfill group goals (e.g., studying for an examination), it is possible that level of competitiveness and individualism predicts level of library anxiety. That is, social interdependence, which comprises cooperative, competitive, and individualistic attitudes (Johnson & Norem-Hebeisen, 1979), is an antecedent correlate of library anxiety.

Based on the conceptualization of Morton Deutsch and Kurt Lewin (Deutsch, 1949), social interdependence theory postulates that cooperation is enhanced when positive interdependence exists among individuals' goals. According to this theory, positive interdependence (i.e., cooperation) results in promotive interaction as students within a cooperative learning group encourage and facilitate each group member's achievement goals. Conversely, negative interdependence typically leads to dysfunctional interaction as group members hinder and inhibit each other's attempts to perform (Johnson, Johnson, & Smith, 1998). Moreover, social interdependence theorists believe that cooperation is based on intrinsic motivation promoted by interpersonal facets, with a collaborative desire to achieve being central toward achieving cooperative goals (Johnson et al., 1998). Simply put, social interdependence positively affects individual interaction with a given situation, which subsequently influences the output that emerges from that interaction (Johnson & Johnson, 1989).

Recently, Onwuegbuzie and Jiao (1998) found those students with the highest levels of library anxiety, among other aspects, tended to be those who were peer-

oriented learners. However, peer-orientation is only one component of overall social interdependence disposition. Indeed, as noted above cooperative, competitive, and individualistic attitudes each play a role in shaping an individual's level of social interdependence (Johnson & Norem-Hebeisen, 1979). However, little is known about how each of these three components of social interdependence relates to anxiety in general and library anxiety in particular. Thus, the purpose of the present study was to examine the relationship between library anxiety and social interdependence. Of particular interest was how these three elements of social interdependence simultaneously relate to library anxiety.

Method

Participants

Participants were 115 graduate students enrolled in seven sections of a graduate-level research methodology course at a mid-southern university. According to the university graduate handbook, the research methodology course involved the "application of scientific method to educational research, including nature of research problems in education, theory of research, experimental design, techniques in data gathering, the interpretation of results, research reporting, and bibliographical techniques." These classes were held for three hours, once per week, for 16 weeks. The main requirement of the course was the completion of a research proposal. The objective of this proposal was to prepare students thoroughly to be able to write proposals for dissertations and for seeking external funding. As such, the research proposals provided authentic assessment. All proposals had to include an in-depth

review of the literature, and thus extensive library usage was required. Students completed these research proposals in groups ranging from three to five students. These groups that were self-selected, were formed on the first class session. Students were advised to choose group members based on major, profession, and proximity to each other's homes.

Because students in that course typically had various levels of experience using the library, a one-hour library orientation always was provided for them at the second class meeting. In this orientation, an instruction librarian demonstrated how to conduct extensive library searches, showing them how to use several electronic databases (e.g., ERIC, PsycLIT, MEDLINE, CINAHL), as well as familiarizing students with the location of various sources. In short, this orientation involved course-integrated instruction, live interactive demonstrations, and hands-on practice exercises. Student feedback indicated that most students found this orientation to be extremely useful (Onwuegbuzie, 1997a).

In order to participate in the study, students were required to sign an informed consent document that was given during the first class session of the semester. For participating in the study, students received percentage points that were applied to their final course average. No student declined to participate. As was typical for this type of class, the majority (89.7%) of sample members was female. The ages of the participants ranged from 22 to 55 (M = 31.7, SD = 8.4). Mean academic achievement, as measured by grade point average, was 3.65 (SD = 0.39).

Instruments and Procedure

Participants were administered the Library Anxiety Scale (LAS) and the Social Interdependence Scale (SIS). The LAS, developed by Bostick (1992), is a 43-item, 5-point Likert-format instrument that evaluates levels of library anxiety experienced by students. The LAS contains the following five subscales: barriers with staff, affective barriers, comfort with the library, knowledge of the library, and mechanical barriers. A high score on any subscale represents high anxiety in this area. Jiao and Onwuegbuzie (1997) reported score reliability, as measured by coefficient alpha, for each subscale as follows: .90 (barriers with staff), .80 (affective barriers), .66 (comfort with the library), .62 (knowledge of the library), and .60 (mechanical barriers). For the present study, the subscales generated scores that had a classical theory alpha reliability coefficient of .93 (95% confidence interval [CI] = .91, .95) for barriers with staff, .90 (95% CI = .87, .92) for affective barriers, .72 (95% CI = .64, .79) for comfort with the library, .69 (95% CI = .59, .77) for knowledge of the library, and .68 (95% CI = .56, .77) for mechanical barriers.

The SIS, developed by Johnson and Norem-Hebeisen (1979) is a 22-item, 5-point Likert-type format instrument measuring individuals' cooperative, competitive, and individualistic perceptions. Scores on the cooperative (7 items) and individualistic (7 items) scales range from 7 to 35, whereas scores on the competitive scale (8 items) range from 7 to 40. The higher the score on each scale, the more cooperative, the more competitive, or the more individualistic the respondents consider themselves to be. Scores on these scales are relatively independent so that a student could conceivably receive a high score on all three scales. Jones, Slate, and Marini (1995) reported

scores that yielded reliability coefficients, as measured by coefficient alpha, of .94 for the cooperative subscale, .85 for the competitive subscale, and .73 for the individualistic subscale. For the current inquiry, the subscales generated scores that had a classical theory alpha reliability coefficient of .85 for the cooperative subscale (95% CI = .80, .89), .87 for the competitive subscale (95% CI = .83, .90), and .93 for the individualistic subscale (95% CI = .91, .95).

Data Analysis

The major data-analytic technique employed in this study involved a canonical correlation analysis. This form of analysis was utilized to identify a combination of social interdependence dimensions (i.e., independent multivariate profile) that might be correlated simultaneously with the five subscales of the library anxiety scale (i.e., dependent multivariate set). The number of canonical functions (i.e., factors) that are yielded for a given data set is equal to the number of variables in the smaller of the two variable sets. Because three social interdependence components and five library anxiety dimensions were involved, three canonical functions were generated.

Results

Means and standard deviations corresponding to scores on the subscales of the LAS and the SIS are presented in Table 1. With respect to the SIS subscales, it can be seen that the items on the cooperative subscale yielded the highest scores. Indeed, a series of dependent *t*-tests on the item means, using the Bonferroni adjustment, revealed that the scores on the cooperative subscale were statistically significantly higher than were scores on the competitiveness ($t = 12.93$, $p < .0001$) and indivualistic

(t = 13.30, p < .0001) subscales. Also, scores on the competitiveness subscale were statistically significantly higher than were scores on the indivualistic subscale (t = 5.95, p < .0001). The Cohen's (1988) d effect sizes corresponding to these differences were .45, .71, and .60. Using Cohen's criteria, these differences were moderate to large. Thus, the sample, as a whole, had the greatest tendency toward a cooperative orientation.

Insert Table 1 about here

The canonical analysis revealed that the three canonical correlations combined were statistically significant (F [15, 295.78] = 2.30, p < .005). However, when the first canonical root was excluded, the remaining canonical roots were not statistically significant (F [8, 216] = 1.74, p > .05). Similarly, when the first and second canonical roots were excluded, the remaining canonical root was not statistically significant (F [3, 109] = 0.73, p > .05). This suggests that the first canonical function was statistically significant, but the second and third canonical roots were not statistically significant. However, because the calculated probabilities are sensitive to sample size, the educational (practical) significance of the obtained results also was assessed (Thompson, 1980). The educational significance of canonical correlations typically is assessed by examining the size (Thompson, 1980, 1984, 1988, 1990). The canonical correlation indicates how much variance the sets of weighted original variables share with each other (Thompson, 1988). In the present study, the first canonical correlation

(R_{c1} = .41) was educationally significant, contributing 16.4% (i.e., R_{c1}^2) of the shared variance, respectively. The second and third canonical correlations only explained 10.0% and 2.0% of the variance, respectively. Consequently, only the first canonical correlation was interpreted.

Data pertaining to the first canonical root are presented in Table 2. This table provides both standardized function coefficients and structure coefficients (Onwuegbuzie & Daniel, in press). For the first canonical correlation, an examination of the standardized canonical function coefficients revealed that, using a cutoff correlation of 0.3 recommended by Lambert and Durand (1975) as an acceptable minimum loading value, the cooperative and competitive dimensions made important contributions to the social interdependence set. With respect to the library anxiety set, barriers with staff, affective barriers, knowledge of the library, and mechanical barriers made an important contribution to the composite set. The structure coefficients pertaining to the first canonical correlation revealed that only the cooperative component made a contribution to the model. Also, barriers with staff, comfort with the library, and knowledge of the library made important contributions.

Insert Table 2 about here

Interestingly, from Table 2, it can be seen from the structural coefficients in the first canonical function, that knowledge of the library made by far the biggest contribution, explaining 70.6% of the variance. This was followed by comfort with the

library (48.2 % explained) and barriers with staff (45.6% explained), respectively.

As noted by Onwuegbuzie and Daniel (in press), variables with small structure coefficients but large standardized coefficients in absolute value magnitude indicate that they are *suppressor* variables in the canonical correlation model. Suppressor variables are variables that assist in the prediction of dependent variables due to their correlation with other independent variables (Onwuegbuzie & Daniel, in press). In the present study, the individualistic dimension appeared to serve as a suppressor variable because the standardized coefficient associated with this variable was large, whereas its corresponding structure coefficient was relatively small. It is likely that the individualistic dimension was a suppressor variable because of its relationship with one or more of the other two social interdependence variables. In particular, the individualistic dimension had an extremely large relationship with cooperative (r = -.64, p < .0001), although it was not statistically significantly associated with the competitive subscale (r = -.01, p > .05). Thus, the individualistic dimension improved the predictive power of the cooperative subscale by suppressing variance that is irrelevant to this prediction, as a result of its relationship to this variable. Similarly, with respect to the library anxiety set, affective barriers and mechanical barriers served as suppressor variables because of their relatively large standardized coefficients and small structure coefficients. Interestingly, both affective barriers and mechanical barriers were statistically significantly related to the other three library anxiety components, with correlation coefficients ranging from .37 to .71, indicating moderate-to-large effect sizes.

BEST COPY AVAILABLE

Discussion

The purpose of this study was to examine the relationship between the dimensions of library anxiety and social interdependence. Findings indicated a moderate relationship between these two sets of variables. A canonical correlation analysis revealed that the cooperative dimension was related significantly to barriers with staff, comfort with the library, and knowledge of the library. Specifically, students who had the greatest cooperative orientation tended to have the lowest levels of library anxiety stemming from barriers with staff, comfort with the library, and knowledge of the library. This relationship between library anxiety and social interdependence is consistent with the results of Onwuegbuzie and DaRos-Voseles (2001), who found that placing students in cooperative learning groups reduced levels of academic-related anxiety for many students. In their study, they reported compelling accounts of how cooperative learning reduced anxiety levels of the participants. For example, one student stated "I enjoyed working with my co-workers. We got to know each other better by working together--that made the class more 'comfortable.' It seemed like when one was anxious, the other was encouraging. We supported each other". Another student admitted that "I really enjoyed working on this as a cooperative learning group. It helped to reduce my level of anxiety." Yet another student reasoned that "By working in groups, the stress and anxiety was shared and therefore somewhat lessened" (Onwuegbuzie & DaRos-Voseles, 2001, p. 68).

The relationship found in the current investigation suggests that library anxiety has a social context. This is consistent with the social interdependence theory which

BEST COPY AVAILABLE

predicts that cooperation is enhanced when positive interdependence exists among individuals' goals (Johnson et al., 1998). Within the library context, positive interdependence (i.e., cooperation) is promoted not only among students but also between students and librarians. According to this theory, positive interdependence culminates in promotive interaction when students encourage and facilitate other students' library search goals, as well as when library educators facilitate these goals. Thus, the relationship found between cooperativeness and barriers with staff and affective barriers might stem from the fact that students with a cooperative orientation are more likely to seek the help and support from others, particularly librarians, when attempting to utilize the library resources. Conversely, students who do not have a cooperative orientation may be less inclined to seek assistance from librarians, thereby elevating their levels of library anxiety stemming from barriers with staff and affective barriers. Not seeking help may threaten their knowledge of how to utilize the library resources, which, in turn, may increase library anxiety levels. Disturbingly, many students perceive asking for help as a failure (Keefer, 1993; Kuhlthau, 1991), despite the fact that those who most need help typically are least likely to seek it (Karabenick & Knapp, 1988). It is possible that students who are less cooperative and more individualistic are less inclined to seek help from librarians. This should be the subject of future research.

The finding that cooperative attitudes were better predictors of library anxiety than were competitive or individualistic attitudes suggests that the former is noteworthy. However, this result may have stemmed, at least in part, from the fact that the sample

members had greater tendencies toward cooperativeness than competitiveness and individualism. Also, it should be noted that individualistic attitudes played an important role in the canonical model by serving as a suppressor variable. Thus, future investigation should assess the reliability of this finding that cooperativeness was the most dominant correlate of library anxiety. Of particular interest is whether cooperativeness remains dominant among samples with more competitive or individualistic orientations. Also worth investigating is the apparent contradiction between the present findings and those of Onwuegbuzie and Jiao (1998). Whereas in the current study, students with the most cooperative attitudes reported the *lowest* levels of library anxiety, Onwuegbuzie and Jiao (1998) found that peer-oriented reported the *highest* levels of library anxiety. Qualitative techniques likely would be useful in providing more information about the role of cooperativeness in the library setting.

Social interdependence theorists believe that cooperation is based on intrinsic motivation promoted by interpersonal facets (Johnson et al., 1998). This suggests that librarians should strive to foster a collaborative environment. Such a setting possibly will help to reduce levels of library anxiety, especially among those who are not cooperatively oriented. This justifies more research in this area.

References

Bailey, P., Onwuegbuzie, A.J., & Daley, C.E. (1998). Anxiety about foreign language: Comparison of French, Spanish, and German classes. *Psychological Reports, 82*, 1007-1010.

Bailey, P., Onwuegbuzie, A.J., & Daley, C.E. (2000a). Correlates of anxiety at three stages of the foreign language learning process. *Journal of Language and Social Psychology, 19*(4), 475-492.

Bailey, P., Onwuegbuzie, A.J., & Daley, C.E. (2000b). Using learning style to predict foreign language achievement at the college level. *System*, 28, 115-133.

Bailey, P., Onwuegbuzie, A.J., & Daley, C.E. (2000c). Study habits and anxiety about learning foreign languages. *Perceptual and Motor Skills, 90*, 1151-1156.

Bostick, S. L. (1992). The development and validation of the Library Anxiety Scale (Doctoral dissertation, Wayne State University, 1992). *Dissertation Abstracts International, 53-12*, Section A, 4116.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, N.J. : L. Erlbaum Associates.

Daly, J.A., & Miller, M.D. (1975a). Apprehension of writing as a predictor of writing intensity. *Journal of Psychology, 89,* 175-177.

Daly, J.A., & Miller, M.D. (1975b). Further studies in writing apprehension: SAT scores, success expectations, willingness to take advanced courses, and sex differences. *Research in the Teaching of English, 9,* 250-256.

Daly, J.A., & Miller, M.D. (1975c). The empirical development of an instrument

to measure writing apprehension. *Research in the Teaching of English, 9,* 242-249.

Daly, J.A., & Shamo, W. (1976). Writing apprehension and occupational choice. *Journal of Occupational Psychology, 49,* 55-56.

Daly, J.A., & Shamo, W. (1978). Academic decisions as a function of writing apprehension. *Research in the Teaching of English, 12,* 119-126.

Daly, J.A., & Wilson, D. (1983). Writing apprehension, self-esteem, and personality. *Research in the Teaching of English, 17,* 327-341.

Deutsch, M. (1949). A theory of cooperation and competition. *Human Relations, 2,* 129-152.

Egan, P. J. (1992). Bridging the gap between the student and the library. *College Teaching, 41,* 67-70.

Everson, H.T., Millsap, R.E., & Rodriguez, C.M. (1991). Isolating gender differences in test anxiety: A confirmatory factor analysis of the Test Anxiety Inventory. *Educational and Psychological Measurement, 51,* 243-251.

Grimes, P. W., & Charters, M. F. (2000). Library use and the undergraduate economics student. *College Student Journal, 34,* 557-569.

Hill, K.T. (1984). Debilitating motivation and testing: A major educational program, possible solutions, and policy applications. In R.E. Ames and C. Ames (Eds.), *Research on motivation in education, 1* (pp. 245-274). New York: Academic Press.

Horwitz, E.K., Horwitz, M.B., & Cope J. (1986). Foreign language classroom anxiety. *Modern Language Journal, 70,* 125-132.

Jiao, Q. G., & Onwuegbuzie, A. J. (1997). Antecedents of library anxiety. *The*

Library Quarterly, 67, 372-389.

Jiao, Q.G., & Onwuegbuzie, A.J. (1998). Perfectionism and library anxiety among graduate students. *Journal of Academic Librarianship, 24,* 365-371.

Jiao, Q.G., & Onwuegbuzie, A.J. (1999a). Self-perception and library anxiety: An empirical study. *Library Review, 48*(3), 140-147.

Jiao, Q.G., & Onwuegbuzie, A.J. (1999b). Is library anxiety important? *Library Review, 48, 278-282.*

Jiao, Q.G., Onwuegbuzie, A.J., & Lichtenstein, A. (1996). *Library anxiety: Characteristics of at-risk college students. Library and Information Science Research, 18,* 151-163.

Jones, C.H., Slate, J.R., & Marini, I. (1995). Locus of control, social interdependence, academic preparation, age study time, and the study skills of college students. *Research in the Schools*, 2, 55-62.

Johnson, D.W., & Johnson, R.T. (1989). *Cooperation and competition: Theory and research.* Edina, MN: Interaction Book Co.

Johnson, D.W., Johnson, R.T., & Smith K.A. (1998). Cooperative learning returns to college: What evidence is there that it works. *Change, 30, 26-35.*

Johnson, D. W., & Norem-Hebeisen, A. A. (1979). A measure of cooperative, competitive, and individualistic attitudes. *The Journal of Social Psychology, 109,* 253-261.

Karabenick, S.A., & Knapp, J.R. (1988). Help seeking and need for academic assistance. *Journal of Educational Psychology, 80,* 406-408.

Keefer, J.A. (1993). The hungry rats syndrome: library anxiety, information literacy, and the academic reference process. *Reference Quarterly, 32,* 333-339.

Kuhlthau, C.C. (1991). Inside the search process: Information seeking from the user's perspective. *Journal of the American Society for Information Science, 42*(5), 361-371.

Lambert, Z. V., & Durand, R. M. (1975). Some precautions in using canonical analysis. *Journal of Market Research, XII,* 468-475.

MacIntyre, P.D., & Gardner, R.C. (1991a). Language anxiety: Its relation to other anxieties and to processing in native and second languages. *Language Learning, 41,* 85-117.

MacIntyre, P.D., & Gardner, R.C. (1991b). Investigating language class anxiety using the focused essay technique. *The Modern Language Journal, 75,* 296-304.

MacIntyre, P.D., & Gardner, R.C. (1991c). Methods and results in the study of anxiety and language learning: a review of the literature. *Language Learning, 41*, 85-117.

Mech, T. F., & Brooks, C. I. (1995, March). *Library anxiety among college students: An exploratory study.* Paper presented at the 7th National Conference of the Association of College and Research Libraries, Pittsburgh, PA.

Mellon, C. A. (1986). Library anxiety: a grounded theory and its development. *College and Research Libraries* 47, 160-165.

Mellon, C.A. (1988). Attitudes: the forgotten dimension in library instruction. *Library Journal, 113,* 137-139.

Onwuegbuzie, A. J. (1997a). Writing a research proposal: The role of library anxiety, statistics anxiety, and composition anxiety. *Library & Information Science Research 19,* 5-33.

Onwuegbuzie, A.J. (1997b). The teacher as researcher: The relationship between enrollment time and achievement in a research methodology course. *Reflection and Research, 3(1)*[On-Line].Available: http://www.gonzaga.edu/rr/v3n1/tony.html

Onwuegbuzie, A.J. (1997c). *Development of the Research Anxiety Rating Scale.* Unpublished manuscript, University of Central Arkansas.

Onwuegbuzie, A.J. (1997d). The teacher as researcher: The relationship between research anxiety and learning style in a research methodology course, *College Student Journal, 31,* 496-506.

Onwuegbuzie, A.J. (in press). Prevalence of statistics anxiety among graduate students. *Journal of Research in Education.*

Onwuegbuzie, A.J., Bailey, P., & Daley, C.E. (1999a). Factors associated with foreign language anxiety. *Applied Psycholinguistics, 20,* 217-239.

Onwuegbuzie, A.J., Bailey, P., & Daley, C.E. (1999b). Relationship between anxiety and achievement at three stages of learning a foreign language. *Perceptual and Motor Skills,* 88, 1085-1093.

Onwuegbuzie, A.J., Bailey, P., & Daley, C.E. (1999c). The validation of three scales measuring anxiety at different stages of the foreign language learning process: The input anxiety scale, the processing anxiety scale, and the output anxiety scale.

Language Learning, 50(1), 87-117.

Onwuegbuzie, A.J., Bailey, P., & Daley, C.E. (2000). Cognitive, affective, personality, and demographic predictors of foreign language achievement. *Journal of Educational Research*, 94, 3-15.

Onwuegbuzie, A.J., Bailey, P., & Daley, C.E. (in press-a). The role of foreign language anxiety and students' expectations in foreign language learning. *Research in the Schools*.

Onwuegbuzie, A.J., Bailey, P., & Daley, C.E. (in press-b). Self-enhancement versus self-derogation biases in learning a foreign language. *Educational Research Quarterly*.

Onwuegbuzie, A.J., Bostick, S.L., & Jiao, Q.G. (in press). *Library anxiety: Theory, research, and applications*. Lanham, MD: Scarecrow Press.

Onwuegbuzie, A.J., & Daniel, L.G. (in press). Typology of analytical and interpretational errors in quantitative and qualitative educational research. *Current Issues in Education*.

Onwuegbuzie, A.J., DaRos, D., & Ryan, J. (1997). The components of statistics anxiety: A phenomenological study. *Focus on Learning Problems in Mathematics, 19*(4), 11-35.

Onwuegbuzie, A. J., & DaRos-Voseles, D. A. (2001). The role of cooperative learning in research methodology courses: A mixed-methods analysis. *Research in the Schools, 8*, 61-75.

Onwuegbuzie, A.J., & Jiao, Q.G (1997). Prevalence and reasons for university

library usage. *Library Review, 46,* 411-420.

Onwuegbuzie, A.J., & Jiao, Q.G. (1998). The relationship between library anxiety and learning styles among graduate students: Implications for library instructors. *Library and Information Science Research, 20,* 235-249.

Onwuegbuzie, A.J., & Jiao, Q.G. (1999). I hope that I am not anxious about using the library: The relationship between hope and library anxiety among graduate students. *Florida Journal of Educational Research, 38(1),* 13-26.

Onwuegbuzie, A.J., & Jiao, Q.G. (2000). I'll go to the library tomorrow: The role of procrastination in Library anxiety. *College and Research Libraries, 61(1),* 45-54.

Onwuegbuzie, A.J., & Wilson, V. (2000, November). *Statistics anxiety: Nature, etiology, antecedents, effects, and treatments: A comprehensive review of the literature.* Paper presented at the annual conference of the Mid-South Educational Research Association, Bowling Green, KY.

Roberts, D.M., & Bilderback, E.W. (1980). Reliability and validity of a statistics attitude survey. *Educational and Psychological Measurement, 40,* 235-238.

Schacht, S., & Stewart, B.J. (1990). What's funny about statistics? A technique for reducing student anxiety. *Teaching Sociology,* 18, 52-56.

Thompson, B. (1980, April). *Canonical correlation: Recent extensions for modelling educational processes.* Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.

Thompson, B. (1984). *Canonical correlation analysis: Uses and interpretations.* Beverly Hills, CA: Sage.

Thompson, B. (1988, April). *Canonical correlation analysis: An explanation with comments on correct practice.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Service No. ED 295 957)

Thompson, B. (1990). Finding a correction for the sampling error in multivariate measures of relationships: A Monte Carlo study. *Educational and Psychological Measurement, 50,* 15-31.

Westbrook, L., & DeDecker, S. (1993). Supporting user needs and skills to minimize library anxiety: Considerations for academic libraries. *The Reference Librarian, 40,* 43-51.

Young, D.J. (1991). Creating a low anxiety classroom environment: What does language anxiety research suggest? *The Modern Language Journal, 75,* 426-439.

Zeidner, M. (1991). Statistics and mathematics anxiety in social science students - some interesting parallels. *British Journal of Educational Psychology, 61,* 319-328.

Table 1

Means and Standard Deviations for Scores on the LAS and SIS Subscales

Subscales	Mean	*SD*
LAS:		
Barriers With Staff	31.81	9.47
Affective Barriers	29.97	8.90
Comfort With the Library	18.00	4.12
Knowledge of the Library	9.72	2.66
Barriers With Staff	7.84	2.31
SIS:		
Cooperative	30.21	3.23
Competitive	22.85	5.80
Individualistic	16.90	5.92

Table 2

Canonical Solution for First Function

Variable	Standardized Coefficient	Structure Coefficient	Structure[2]
LAS Subscale			
Barriers With Staff	-0.520*	-.675*	.456
Affective Barriers	0.470*	-.275	.076
Comfort With the Library	-0.284	-.694*	.482
Knowledge of the Library	-0.729*	-.840*	.706
Mechanical Barriers	0.350*	-.090	.008
SIS Subscale			
Cooperativeness	1.321*	.687*	.472
Competitiveness	-0.100	.138	.019
Individualism	0.959*	.110	.012

*Loadings with effect sizes larger than .3 (Lambert & Durand, 1975)